

## **CLAIMS**

I claim:

1. An electronic golf swing analyzer system, comprising:

a. an analyzer including an infrared sensor base and an ultrasonic sensor base, said infrared sensor base includes a hitting area with a center axis with two arrays of infrared sensors located therein used to detect the presence of a club head moving through said hitting area, each said array of infrared sensors being located on opposite sides and equal distance from said center axis, said ultrasonic sensor base being perpendicularly aligned and extending upward above said infrared sensor base, said ultrasonic sensor base including at least two ultrasonic sensors aimed at said hitting area, said ultrasonic sensors being located on opposite sides and equal distance from said center axis, means for activating said ultrasonic sensor on the same side of said center axis as said array of infrared sensors located on the same side of said center axis when a golf club moves across said infrared sensor base;

14 b. a computer having working memory;

15 c. means for connecting said analyzer to said computer,

16 c. a golf swing analyzing software application loaded into said working memory  
17 of said computer, said software application capable of using the data from said ultrasonic  
18 sensors and said infrared sensors when a golf club is swing is made over said hitting area to  
19 determine a golf ball's distance, direction, and flight path after impact.

21 2. The electronic golf swing analyzer system, as recited in Claim 1, wherein said means  
22 for activating said ultrasonic sensors on the same side of said center axis when said array of  
23 infrared sensors are activated is a micro-controller coupled to said infrared sensors that

1 activates said ultrasonic sensor.

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3 3. The electronic golf swing analyzer system, as recited in Claim 1, wherein said array of  
4 infrared sensors includes one outer infrared sensor and two inner infrared sensors.

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6 4. The electronic golf swing analyzer system, as recited in Claim 3 wherein said  
7 ultrasonic sensors are automatically activated to produce ultrasonic signals when a golf club  
8 moves over said arrays of infrared sensors, said ultrasonic sensors being aimed to transmit an  
9 ultrasonic signal and receive a reflected ultrasonic signal from a golf club moving over said  
10 array of infrared sensors located on the same side of said center axis.

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12 5. The electronic golf swing analyzer system, as recited in Claim 3, wherein the  
13 ultrasonic sensor located on one side of said center axis is coupled to said inner infrared  
14 sensors to activate said inner infrared sensors.

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16 6. The electronic golf swing analyzer system, as recited in Claim 3, wherein each said  
17 infrared sensor include an infrared emitter and an infrared photodiode detector.

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19 7. The electronic golf swing analyzer system, as recited in Claim 6, wherein said  
20 infrared emitter and said infrared photodiode detector are located in a bushing fitted to said  
21 infrared support base.

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23 8. The electronic golf swing analyzer system, as recited in Claim 7, further including an

1 infrared filter located over said photo-detector.

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3 9. The electronic golf swing analyzer system, as recited in Claim 8, further including a  
4 lens mounted over said photodiode detector to direct infrared radiation towards said photo-  
5 detector.

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7 10. The electronic golf swing analyzer system, as recited in Claim 1, further including a  
8 rubber mat attached over said infrared sensor base.

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10 11. The electronic golf swing analyzer system, as recited in Claim 1, wherein said means  
11 to connect said computer to said analyzer is a serial communications cable.

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13 12. The electronic golf swing analyzer system, as recited in Claim 1, wherein said  
14 infrared support base and said ultrasonic support base are pivotally connected together along  
15 one edge thereby enabling said analyzer to be selectively opened and closed.

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17 13. The electronic golf swing analyzer system, as recited in Claim 1, wherein said arrays  
18 of infrared sensors transmit and receive an infrared signal reflected from a golf club head  
19 moving over said array to detect the velocity of a golf club.

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21 14. The electronic golf swing analyzer system, as recited in Claim 1, wherein said  
22 ultrasonic sensors are automatically activated to produce ultrasonic signals when a golf club  
23 moves over said arrays of infrared sensors located on the same side of said center axis of said

1 infrared support base, said ultrasonic sensors being aimed to transmit an ultrasonic signal and  
2 receive a reflected ultrasonic signal from a golf club moving over said array of infrared  
3 sensors located on the same side of said center axis.

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5 15. An electronic golf swing analyzer system, comprising:

6 a. an analyzer including an infrared sensor base and an ultrasonic sensor base,  
7 said infrared sensor base includes a hitting area with a center axis with two arrays of infrared  
8 sensors located therein used to detect the presence of a club head moving through said hitting  
9 area, each said array of infrared sensors include an infrared emitter and an infrared  
10 photodiode detector and being located inside a bushing mounted on opposite sides and equal  
11 distance from said center axis, said ultrasonic sensor base being perpendicularly aligned and  
12 extending upward above said infrared sensor base, said ultrasonic sensor base including at  
13 least two a pair of ultrasonic sensors aimed at said hitting area, said pair of ultrasonic sensors  
14 being located on opposite sides and equal distance from said center axis, 3 said ultrasonic  
15 sensors being automatically activated to produce ultrasonic signals when a golf club moves  
16 over said arrays of infrared sensors, said ultrasonic sensors being aimed to transmit an  
17 ultrasonic signal and receive a reflected ultrasonic signal from a golf club moving over said  
18 array of infrared sensors located on the same side of said center axis;

19 b. a computer having working memory and a visual display means;  
20 c. means for connecting said analyzer to said computer,  
21 d. a golf swing analyzing software application loaded into said working memory  
22 of said computer, said software application capable of using the data from said ultrasonic  
23 sensors and said infrared sensors when a golf club is swing is made over said hitting area to

1 determine a golf ball's distance, direction, and flight path after impact and displaying said  
2 information on said display means.

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4 16. The electronic golf swing analyzer system, as recited in Claim 15, wherein said  
5 infrared support base and said ultrasonic support base are pivotally connected together along  
6 one edge thereby enabling said analyzer to be selectively opened and closed.

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8 17. The electronic golf swing analyzer system, as recited in Claim 15, further including a  
9 stance base connected to said infrared support base upon which a player stands to swing a  
10 golf club.

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12 18. The electronic golf swing analyzer system, as recited in Claim 17, wherein said stance  
13 base includes a grid surface.

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15 19. The electronic golf swing analyzer system as recited in Claim 18, wherein said stance  
16 base includes two hinged boxes.

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18 20. The electronic golf swing analyzer system, as recited in Claim 15, wherein said  
19 software program allows a user to select a specific club, ball, environmental conditions, and  
20 the player's profile (right handed or left handed golfer).

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